REMARKS

Claim 31 has been amended. Claims 27 to 32 remain active in this application.

Claim 31 has been amended to overcome the rejection under 35 U.S.C. 112, second paragraph. It is assumed that the amendment to claim 31 overcomes the rejection applied as to the remaining claims since no reason for rejection of the remaining claims was provided.

Claims 27, 28 and 30 to 32 were rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki et al. (U.S. 6,709,901). The rejection is respectfully traversed.

Claim 31, from which all other claims depend, requires, among other features, the step of providing an added conductive region having at least one conductive layer on the metallization pattern covering and conformal to the at least one contact pad, the sidewalls of the window and a portion of the protective overcoat surrounding the window, the added conductive region having a planar outer surface, the outer surface of the added conductive region suitable to form metallurgical bonds without melting;

It is readily apparent from a review of Fig. 10(b) of Yamazaki et al. that the features of claim 31 as outlined above are not found therein. The region 230 of Yamazaki et al. is not conformal to the sidewall of the window or conformal to a portion of the protective coating 222. It is elementary that for a rejection under section 102 to be proper, each and every feature of the claim must be found in a single reference. This is clearly not the case herein. In addition, the arguments presented in the prior response are incorporated herein by reference.

Claim 29 was rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. in view of Akram et al. (U.S. 6,617,687). The rejection is respectfully traversed.

Claim 29 depends from claim 31 and therefore defines patentably over the applied references for at least the reasons presented above with reference to claim 31 since Akram et al. fails to overcome the deficiencies in Yamazaki et al.

In view of the above remarks, favorable reconsideration and allowance are respectfully requested.

Respectfully submitted,

Jay M. Cantor
Reg. No. 19906
(301) 424-0355
(972) 917-5293

REMARKS

Claim 13 has been amended for improved clarity. Claims 13 to 20 remain active in this application.

Claims 13 to 16 were rejected under 35 U.S.C. 102(b) as being anticipated by Galloway (EP 633607) in view of Gilleo (U.S. 6,020,220). The rejection is respectfully traversed.

To begin with, a rejection under 35 U.S.C. 102 must be based upon a single reference. Accordingly, the rejection is improper for that reason alone.

In addition, claim 13 requires a membrane for use in conjunction with a semiconductor carrier. No such structure is taught or suggested by Galloway, Gilleo or any proper combination of these references. It is noted that the bumps referred to in both references are a part of a semiconductor device and not a membrane for use in conjunction with a semiconductor device as claimed.

Furthermore, claim 13 requires an electrically insulating substrate for application to a semiconductor carrier. No such feature is taught or suggested by Galloway, Gilleo or any proper combination of these references either alone or in the combination as claimed.

Claim 13 yet further requires an interconnect pattern on the substrate. No substrate is taught or suggested by either of the applied references in the combination as claimed.

Claim 13 still further requires a stud coupled to the interconnect pattern on the substrate, the stud comprising a gold ball and a compliant material coating over a portion of said gold ball. No such feature is taught or suggested by Galloway, Gilleo or any proper combination of these references either alone or in the combination as claimed.

Claims 14 to 16 depend from claim 13 and therefore define patentably over the applied references for at least the reasons presented above with reference to claim 13.

In addition, claim 14 further limits claim 13 by requiring that the gold ball be the ball of a ball bond on the substrate. No such feature is taught or suggested by Galloway, Gilleo or any proper combination of these references either alone or in the combination as claimed.

Claims 15 and 16 further limit claim 13 and 14 by requiring that the coating be a compliant epoxy resin. No such feature is taught or suggested by Galloway, Gilleo or any proper combination of these references either alone or in the combination as claimed.

Claims 17 to 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Galloway in view of Lytle (U.S. 5,674,780). The rejection is respectfully traversed.

Claims 17 to 20 depend from claim 13 and therefore define patentably over the applied references for at least the reasons presented above with reference to claim 13 since Lytle fails to overcome the above-listed deficiencies of Galloway.

In addition, claims 17 and 18 further limit claims 15 and 16 by requiring that the compliant material be filled with a material having sufficient hardness to be capable of penetrating the oxide film on the contact pads of semiconductor devices. No such feature is taught or suggested by Galloway, Lytle or any proper combination of these references either alone or in the combination as claimed.

Claims 19 and 20 further limit claims 17 and 18 by requiring that the material be silver or silver-based flakes. coating be a compliant epoxy resin. No such feature is taught or suggested by Galloway, Lytle or any proper combination of these references either alone or in the combination as claimed.

In view of the above remarks, favorable reconsideration and allowance are respectfully requested.

Respectfully submitted,

Jay M. Cantor

Attorney for Applicant(s)
Reg. No. 19,906

Texas Instruments Incorporated
P. O. Box 655474, MS 3999
Dallas, Texas 75265
(301) 424-0355 (Phone)
(972) 917-5293 (Phone)
(301) 279-0038 (Fax)